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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,295	09/10/2003	Daisuke Yoshida	00684.002964.1	2456
5514	7590	09/20/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			PIZIALI, JEFFREY J	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	
			2673	

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,295	YOSHIDA, DAISUKE	
	Examiner	Art Unit	
	Jeff Piziali	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/505,194.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/505,194 (now Patent No. 6,670,938), filed on 16 February 2000.

Specification

2. The disclosure is objected to because of the following informalities:
Page 2, Line 16 -- "liens" should be changed to "lines;"
Page 5, Line 14 -- "Figure 21" should be changed to "Figure 20;" and
Page 30, Line 11 -- "wit" should be changed to "with."
Appropriate correction is required.
3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 8, 9, 11, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Independent claim 8 recites the limitation "the liquid crystal display devices" in line 8; the limitation "the first transfer switches" in line 18; the limitation "the second transfer switches" in line 19. There is insufficient antecedent basis for these limitations in the claim. It would be unclear to one having ordinary skill in the art whether the "display devices" and the "transfer switches" are meant to refer respectively to "the liquid crystal display device" in line 2 and the "first and second transfer switch" in line 14; or whether these limitations refer respectively to entirely separate and distinct inventive elements.

7. Independent claim 9 recites the limitation "the liquid crystal display devices" in line 8; the limitation "the first transfer switches" in line 19; the limitation "the second transfer switches" in line 20. There is insufficient antecedent basis for these limitations in the claim. It would be unclear to one having ordinary skill in the art whether the "display devices" and the "transfer switches" are meant to refer respectively to "the liquid crystal display device" in line 2 and the "first and second transfer switch" in line 15; or whether these limitations refer respectively to entirely separate and distinct inventive elements.

8. Dependent claim 11 recites the limitation "the picture supply means" in line 2. There is insufficient antecedent basis for this limitation in the claim. It would be unclear to one having

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ordinary skill in the art whether the "picture supply means" is meant to refer to "the picture supplying means" in claims 8 and 9, line 12, or whether this limitation refers to an entirely separate and distinct inventive element.

9. Dependent claim 13 recites the limitation "the picture supply means" in line 2. There is insufficient antecedent basis for this limitation in the claim. It would be unclear to one having ordinary skill in the art whether the "picture supply means" is meant to refer to "the picture supplying means" in claims 8, line 12, or whether this limitation refers to an entirely separate and distinct inventive element.

10. Dependent claims 10, 12, 14, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon rejected base claims.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 8-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hiroki (US 6,628,253 B1).

Regarding claim 8, Hiroki discloses a liquid crystal apparatus, comprising: a liquid crystal device [Fig. 1; 101] comprising an active matrix substrate (see Column 1, Lines 8-12) having thereon a plurality of signal lines [Fig. 1; 103] arranged in columns, a plurality of scanning lines [Fig. 1; 102] arranged rows, and pixel electrodes [Fig. 5A; A, B, C] each connected via a pixel switch [Fig. 5A; TFTs] to an intersection of the signal lines and the scanning lines so as to supply picture signals to the pixel electrodes via the signal lines, a counter substrate disposed opposite to the active matrix substrate, and a liquid crystal disposed between the active matrix substrate and the counter substrate (see Column 6, Line 63 - Column 7, Line 6), and drive means [Fig. 1; 105] for driving the liquid crystal devices, wherein said drive means including: a first common signal line [Fig. 2A; 129 output] and a second common signal line [Fig. 2A; 130 output] for supplying the picture signals, picture signal-supplying means [Fig. 2A; 129, 130] for supplying picture signals of one polarity [Fig. 4; 129] to the first common signal line and picture signals of the other polarity [Fig. 4; 130] to the second common signal line, a first and a second transfer switch [Fig. 2A; CMOS circuitry within the 'Sampling Circuit and Buffer Circuit'] provided to each column signal line for selectively supplying one of picture signals supplied to the first and second common signal lines to each column signal line (see Column 8, Line 49 - Column 9, Line 19), and column inversion [Figs. 11A, 11B, 11C] drive means for: in a first frame [Fig. 4; '1 Frame'], selectively turning on the first transfer switches for odd-numbered column signal lines [Fig. 2A; 1, 3] and the second transfer switches for even-numbered column signal lines [Fig. 2A; 2, 4], and in a second frame [Fig. 4; 'Next Frame'], selectively turning on the second transfer switches for odd-numbered column signal lines [Fig.

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2A; 1, 3] and the first transfer switches for even-numbered column signal lines [Fig. 2A; 2, 4] (see Column 11, Line 49 - Column 12, Line 9).

Regarding claim 9, this claim is rejected by the reasoning applied in rejecting claim 8; furthermore, Hiroki discloses a dot inversion [Fig. 12C] drive means for: in a first frame [Fig. 4; '1 Frame'], selectively turning on the first transfer switches for odd-numbered column signal lines [Fig. 2A; 1, 3] and the second transfer switches for even-numbered column signal lines [Fig. 2A; 2, 4] at the time of scanning odd-numbered scanning lines [Fig. 2A; Scan Lines A & C], and selectively turning on the second transfer switches for odd-numbered column signal lines [Fig. 2A; 1, 3] and the first transfer switches for even-numbered column signal lines [Fig. 2A; 2, 4] at the time of scanning even-numbered scanning lines [Fig. 2A; Scan Lines B & D]; and in a second frame [Fig. 4; 'Next Frame'], selectively turning on the second transfer switches for odd-numbered column signal lines [Fig. 2A; 1, 3] and the first transfer switches for even-numbered column signal lines [Fig. 2A; 2, 4] at the time of scanning odd-numbered scanning lines [Fig. 2A; Scan Lines A & C], and selectively turning on the first transfer switches for odd-numbered column signal lines [Fig. 2A; 1, 3] and the second transfer switches for even-numbered column signal lines [Fig. 2A; 2, 4] at the time of scanning even-numbered scanning lines [Fig. 2A; Scan Lines B & D] (see Column 12, Lines 31-67).

Regarding claim 10, Hiroki discloses the first transfer switches comprise a transistor of a first conductivity type and the second transfer switches comprise a transistor of a second

conductivity type different from the first conductivity type (see Fig. 2A; Column 10, Lines 13-29 -- in particular, see the CMOS circuitry within the 'Sampling Circuit and Buffer Circuit').

Regarding claim 11, Hiroki discloses the picture signal supply means includes first [Fig. 2A; 129] and second [Fig. 2A; 130] picture signal-generating means for generating positive-polarity picture signals [Fig. 4; 129] and negative-polarity picture signals [Fig. 4; 130], respectively, supplied to the first and second common signal lines, respectively; the first picture signal generating means generate picture signals in a range between a highest voltage and a central voltage supplied to the pixel electrodes (see Fig. 4; Column 11, Line 49 - Column 12, Line 9); the second picture signal-generating means generates picture signals in a range between the central voltage and a lowest voltage supplied to the pixel electrodes; the first and second picture signal-generating means are operated at different supply voltages; the supply voltages for the first picture signal-generating means are set to be the highest voltage + α and the central voltage - α ; and the supply voltages for the second picture signal-generating means are set to be the central voltage + α and the lowest voltage - α , wherein α denotes α voltage lowering margin due to an internal resistance in the picture signal-generating means (see Column 10, Line 34 - Column 11, Line 3).

Regarding claim 12, Hiroki discloses α is in the range of 0 volt to 1 volt (see Fig. 4; Column 10, Line 34 - Column 11, Line 3).

Regarding claim 13, Hiroki discloses the first and second transfer switches and the picture signal supply means are disposed on a common substrate with the active matrix substrate (see Column 8, Lines 8-16).

Regarding claim 14, Hiroki discloses the active matrix substrate comprises an insulating substrate (see Column 8, Lines 25-41).

Regarding claim 15, Hiroki discloses the active matrix substrate comprises a single crystal substrate (see Column 8, Lines 25-41).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zhang et al (US 6,806,862 B1), Hiroki (US 6,771,238 B1), Matsueda et al (US 6,380,917 B2), Jeong (US 6,373,459 B1), Nakao (US 6,331,846 B1), Jeong et al (US 6,100,868 A), Ozawa (US 6,069,605 A), Kang et al (US 6,055,175 A), Sasaki (US 6,049,321 A), Ohi (US 5,604,511 A), Nishimura (US 4,981,339 A), and Yasuda et al (US 4,842,371 A) are cited to further evidence the state of the art pertaining to liquid crystal apparatuses.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J.P.

12 September 2005



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